

On the holotype specimen of *Coutierea agassizi* (Coutière) (Crustacea ; Decapoda Natantia ; Pontoniinae)

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Résumé. — L'holotype et unique spécimen connu de *Coutierea agassizi* (Coutière) a été réexaminé et quelques points obscurs de sa morphologie précisés. Les appendices buccaux sont aussi décrits et figurés, plusieurs pour la première fois. En ce qui concerne la position systématique de cette forme, il semble qu'elle soit plus proche de *Pseudocoutierea* Holthuis qu'on ne le pensait, puisque les dactyles des pattes ambulatoires ne présentent aucune différence significative et sont notamment dépourvus de tubercules basilaires. C'est par la présence d'une épine hépatique chez *Coutierea* que les deux genres sont le plus facilement séparés.

The shrimp *Coutierea agassizi* was originally described by COUTIÈRE in 1901 on the basis of a single example obtained from off Barbados, probably in 1879 by the "Blake" at a depth of 94 fms. No further specimens of this shrimp have been reported since that time. COUTIÈRE placed the shrimp in the genus *Coralliocaris*, but the genus *Coutierea* was proposed for it later, in 1901, by NOBILI.

The original description left some of the morphological features in doubt, to the extent that KEMP (1928) doubted that it should be included in the subfamily Pontoniinae. HOLTHUIS (1951) clearly placed the species in the Pontoniinae, while noting that COUTIÈRE's description was not quite clear.

The specimen is still preserved in the collections of the Muséum national d'Histoire naturelle, Paris, and, through the kindness of Pr J. FOREST, it has been possible to examine and report upon it in order to clarify some of the uncertainties.

Coutierea agassizi (Coutière) (Figs 1-3)

RESTRICTED SYNONYMY

Coralliocaris Agassizi Coutière, 1901 : 115, fig. NOBILI, 1901 : 4.
Coutierea agassizi : HOLTHUIS, 1951 : 179-181, pl. 56, (full synonymy) ; 1955 : 74 fig. 47 b. CHACE, 1972 : 25. BORUKOVSKY, 1974 : 73, fig. 121b.

MATERIAL EXAMINED : 1 ♂, holotype, Mus. natn. Hist. nat., Paris, "Blake", Stn. 276, 94 fms, off Barbados, 1878-79 (M.N.H.N. n^o Na 1886).

STATE OF PRESERVATION : Well preserved and almost complete.

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DESCRIPTION

Re-examination of the holotype confirms the general accuracy of COUTIÈRE'S original description, so that a full detailed description is unnecessary. The points of particular morphological interest are as follows :

The orbital region shows a very large and deeply developed orbital fossa, roofed dorsally by a large acute supra-ocular tooth. The ventro-lateral part of the orbit is greatly prolonged as an acute tooth, which bears a small accessory acute tooth on its lateral aspect on the left side only. Immediately posterior to the postero-lateral margin of the orbit is a large stout, acute, antero-dorsally directed tooth. The antero-lateral margin of the earapae, posterior to the level of the basicerite, is deeply emarginate, and the antero-lateral angle bears a small acute tooth.

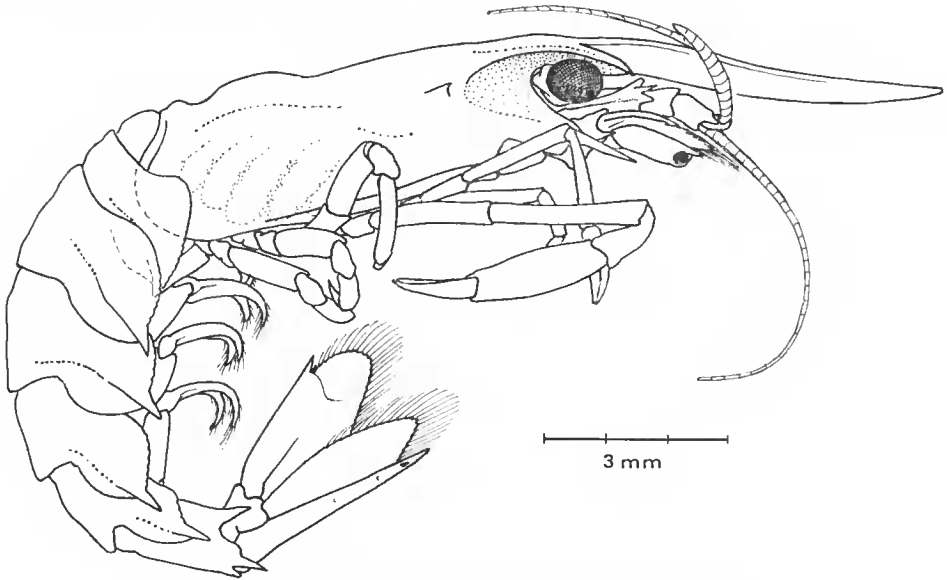


FIG. 1. — *Coulierea agassizi* (Coutière). Holotype mâle.

The proximal segment of the antennular peduncle has a strong ventro-medial tooth at about 0.6 of the length of the medial border. The disto-lateral angle is acutely produced and bears a strong disto-lateral tooth. On the antennal peduncle, the earpocerite bears a distinct distal dorso-medial tooth. The mero- and ischioerite are normal. The basicerite bears an acute disto-lateral tooth, with another acute tooth medially proximal to the ischioerite. The ventral aspect bears also a distinct blunt process.

The mandible is robust and without a palp. The incisor process is well developed, with three stout acute teeth distally. The molar process is stout, with several large blunt teeth and some groups of setae distally. The maxillula has a distinctly bilobed palp, with the lower lobe bearing a short simple seta. The upper lacinia is broad, distally rounded,

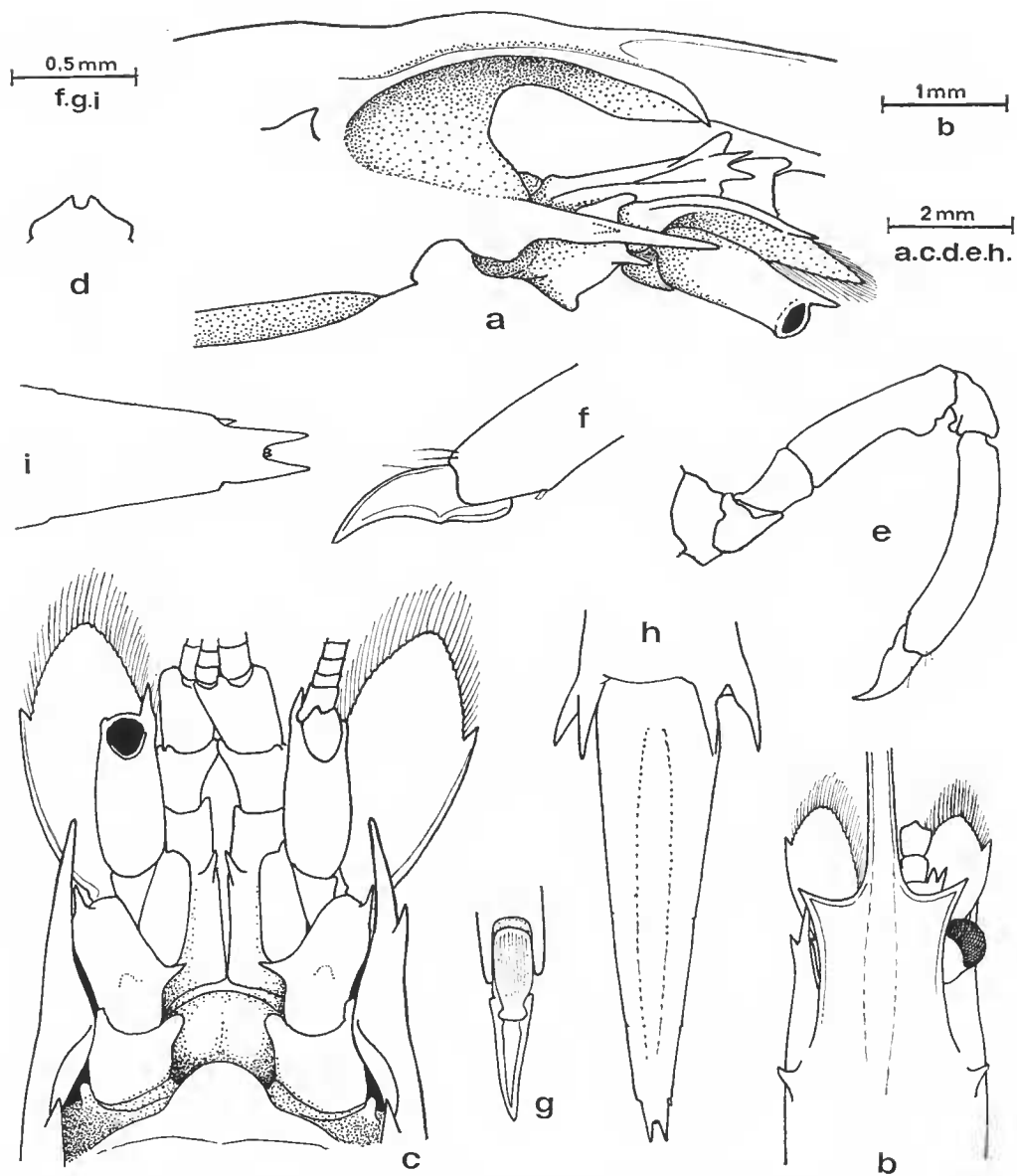


FIG. 2. — *Coutierea agassizi* (Coutière). Holotype male. a, orbital region, lateral aspect; b, anterior carapace, dorsal; c, ventral view of anterior carapace; d, fourth thoracic sternite; e, fifth pereopod; f, dactyl of fifth pereopod; g, *idem* ventral aspect; h, telson; i, posterior end of telson.

with numerous fine setae. The lower lacinia is small, tapering distally, also with numerous fine setae. The maxilla has a well developed, non-setiferous, subcylindrical palp. The basal endite is bilobed, with a few simple setae distally on each lobe. The coxal endite

is absent, the medial border of the coxa being sparsely setose. The scaphognathite is large, about three times longer than the central width. The anterior lobe is rather pointed, with a straight medial margin, and the posterior lobe is well developed. The first maxilliped has a slender simple palp, without seta. The basal endite is large, broad, distally rounded and sparsely setose along its anterior and medial margins. A small rounded non-setose basal endite is also present. The caridean lobe is large, broadest proximally and without

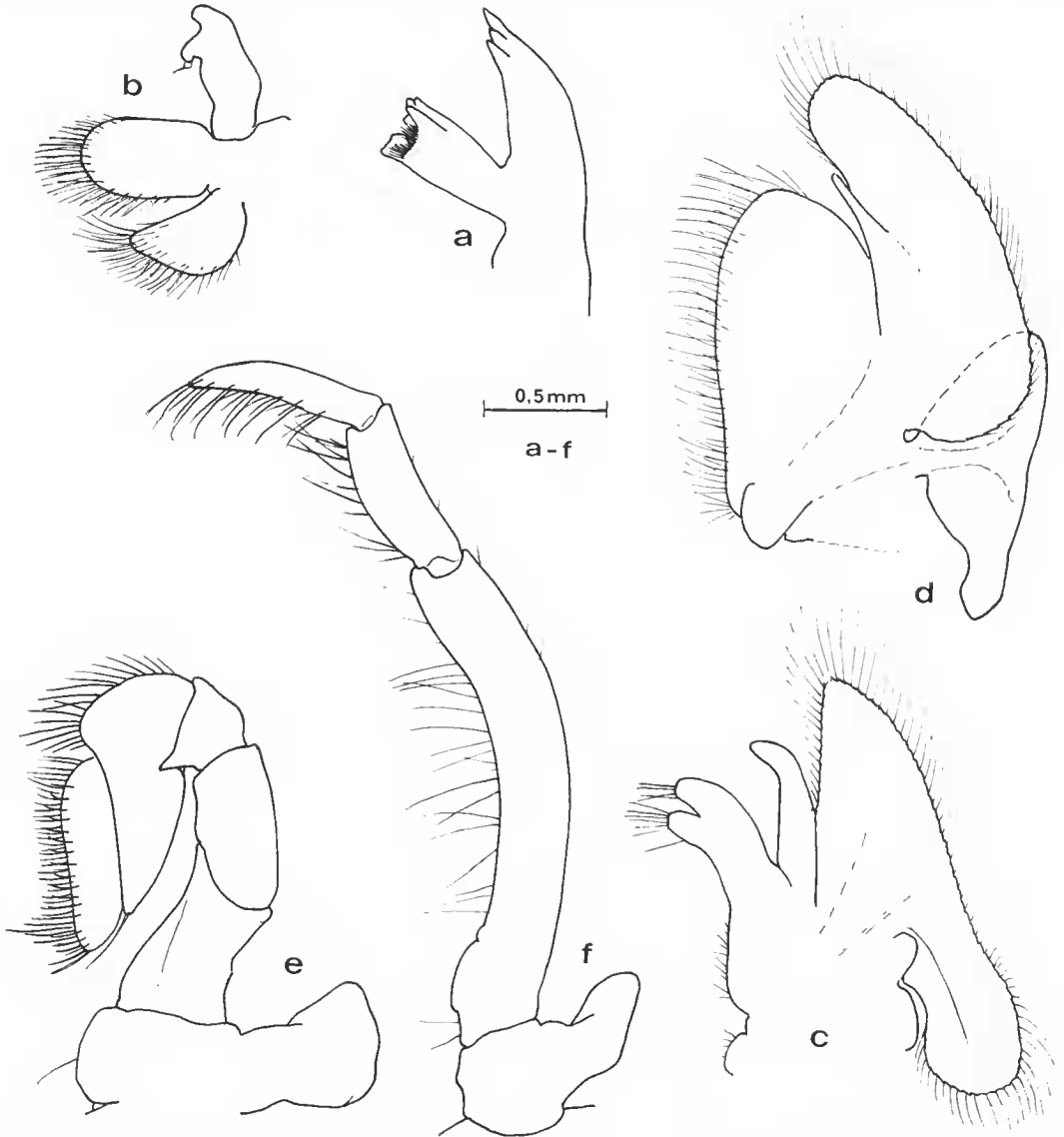


FIG. 3. — *Coulierea agassizi* (Coutière). Holotype male. a, mandible; b, maxillula; c, maxilla; d, first maxilliped; e, second maxilliped; f, third maxilliped.

any trace of a flagellum. A large triangular epipod is also present. The second maxilliped is of normal form, with the dactylar segment about 3.7 times longer than wide. A large sub-rectangular epipod, without a podobranch, is present, but there is no trace of an exopod. The third maxilliped is slender, with the ischio-merus fused with the basis. The exopod is completely lacking, as is the arthrobranch, but a large epipod is present. The fourth thoracic sternite forms a transverse carina with a small median notch.

The ambulatory pereopods are basically as described by COUTIÈRE, but the dactyl does not have a distinct basal tubercle. A flattened plaque is present ventrally, which is exposed when the dactyl is fully extended. The plaque, into which the apodeme of the flexor muscle is attached, is withdrawn entirely into the distal end of the propod upon flexion. The dactyl is stout and simple, without a distinct unguis.

The pleura of the first to fifth abdominal segments bear strong acute postero-ventral spines, with ridges extending across the pleura. The anterior ventral margins are finely crenulate.

The exopod of the uropod has a straight lateral border terminating in a large acute tooth, with a small mobile spine medially.

The telson is slender, about 3.6 times longer than broad proximally. The median dorsal surface is longitudinally grooved. A pair of short stout pointed processes that are fully fused with the telson are present distally. A pair of small stumps in the notch between these processes are probably the bases of broken slender spines. At about 0.96 of the telson length a pair of small lateral spines, one of which still remains, have been present. At 0.48 and 0.75, minute pits are present, indicating where two pairs of minute spines have been lost.

MEASUREMENTS : Carapace and rostrum, 12.9 mm ; post-orbital carapace length, 6.0 mm ; major chela, 3.5 mm.

DISCUSSION

The difficulties in assessing the systematic position of *Coutierea agassizi* have arisen principally from uncertainties in interpretation of the spines of the carapace and the morphology of the telson. It was the latter particularly that caused KEMP (1922) to doubt that the specimen could be placed in the Pontoniinae.

The re-examination of the telson shows that it is in general agreement with most of the other species of the subfamily and that two pairs of dorsal spines were probably present, although these were very small, and the posterior margin was provided with three pairs of spines. Of these, the slender sub-median spines are now broken and represented by a pair of stumps ; the sub-median ones are stout and ankylosed to the telson, and the lateral ones are small and rather remote from the extreme posterior margin. A similar form of telson is found in the coral associate *Hamopontonia corallicola*, in which the intermediate pair of posterior telson spines also form strong ventrally curved hooks (BRUCE, 1970).

The deep orbit is roofed over dorsally by a large triangular supra-ocular tooth, and not a supra-orbital spine, as noted by HOLTHUIS (1951). Immediately behind the postero-lateral rim of the orbit is a large tooth that HOLTHUIS referred to as post-antennal. This was originally described by COUTIÈRE as a hepatic spine and, in my opinion, this inter-

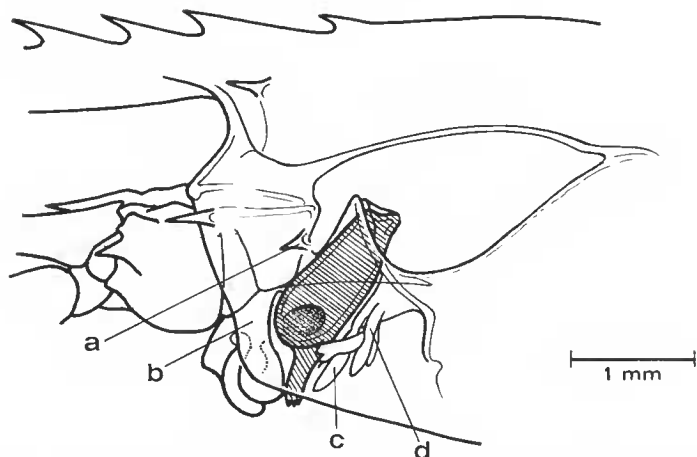


FIG. 4. — *Periclimenes spiniferus* De Man. Male, Heron Island, Queensland, Australia, ecleared, anterior carapace in lateral view. Mandible shaded. a, hepatic spine; b, labrum; c, paragnath; d, maxillula.

pretation is correct. In those pontonine shrimps in which a hepatic spine is present it is usually situated just in front of the postero-lateral end of the corpus of the mandible (fig. 4) and it occupies approximately this position in *C. agassizi*. Further difficulty has arisen in interpreting COUÏÈRE's description because the small accessory tooth on the antero-ventral prolongation of the orbit is present in the left and absent on the right. I consider that the side in which it is present should be accepted as normal from the systematic point of view. A possible interpretation of this accessory spine is that it represents the true antennal spine and that the other greatly elongated process is the enlarged inferior orbital angle, thus presenting a normal pontonine complement of processes.

In the definition of the genus, HOLTHUIS (1951) reports that there are one or two post-orbital spines, noting that COUÏÈRE only mentions one, the hepatic spine. The two other spines apparently shown in the figure of the dorsal aspect of the anterior carapace are definitely not present and must be due to errors in the reproduction of COUÏÈRE's illustration. The anterior spine may be the lateral aspect of the eyestalk.

The systematic relationships of *C. agassizi* remain unchanged and it is closely allied to *Pseudocoulierea* Holthuis. In his key to these genera, HOLTHUIS separated *Coulierea* from *Pseudocoulierea* by the presence of pterygostomial and post-orbital spines and of a basal protuberance on the daetyls of the last three legs. The two genera may be conveniently separated by the presence of a post-orbital (= hepatic) spine in *Coulierea*, but there is no essential difference in the morphology of the ambulatory daetyls. The mouthparts in the two genera are essentially similar and the only noteworthy difference is the presence of a small arthrobranch on the third maxilliped in *Pseudocoulierea*.

The hosts of *Coulierea agassizi* have still not been identified, but it is now known that *Pseudocoulierea* is an associate of erinoids (M. M. CRIALES, pers. comm.), so it seems probable that *Coulierea* will be involved in similar associations.

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ADDENDUM

Subsequently to the submission of the manuscript of this article, an ovigerous female specimen of this species, was described probably from off the Dominican Republic at a depth of 148-165 m by HOLTHUIS (1978). The specimen agrees closely with the type, but is completely without the small accessory antennal spine present on the left side in the holotype. This spine may therefore represent an individual abnormality.